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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY	DOCKET NO.
09/132,876	08/11/98	WU	K	252103-2040

IM62/1117
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EXAMINER

CHEN, K

ART UNIT

PAPER NUMBER

1765

DATE MAILED:

11/17/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/132,876

Applicant(s)
Kun-Lin Wu et al.

Examiner
Kin-Chan Chen

Group Art Unit
1765



- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-27 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 14, 15, 18-20, and 25-27 is/are allowed.
- ☒ Claim(s) 1-13, 16, 17, and 21-24 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☒ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- *Certified copies not received: _____.
- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Drawings

1. Drawings described in specification (page 6) are not present. The subject matter of this application admits of illustration by drawings to facilitate understanding of the invention.

Applicant is required to furnish drawings under 37 CFR 1.81.

Specification

2. The incorporation of essential material in the specification by reference to a foreign application, Taiwan application serial no. 87110514, is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

3. Claims 3, 4, 7-10, 16, 17, 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claims 3 and 16, examiner suggests deleting (HDPCVD).

In claims 4, 7, 17, and 21, examiner suggests deleting (PECVD).

In claims 8-10 and 22-24, examiner suggests deleting (CVD).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran (U.S. 5,942,801) in view of Jen et al. (U.S. 5,960,295).

Tran teaches that a metal layer and a dielectric layer may be formed over a semiconductor substrate. The dielectric layer may be polished to form a planar surface (column 1).

Unlike the claimed invention, Tran does not teach forming a thin cap layer over the dielectric layer.

In a method of semiconductor device fabrication, Jen discloses that TEOS or BPSG may be applied over the dielectric layer (column 6). Silicane may be used as main reactive agent to form a layer with conventional material (such as polysilicon) over the dielectric layer (column 6). Therefore, it would be obvious to one skilled in the art to use Silicane as main reactive agent with any conventional materials such as silicon nitride to form a cap layer over dielectric layer. Hence,

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it is the examiner's position that a person having ordinary skill in the art would have found it obvious to modify Tran by applying cap layer over dielectric layer as taught by Jen in order to fabricate the device with desired structure.

The above cited claims differ from the prior art by teaching various features well known to the art of semiconductor device (such as HDPCVD, PECVD, silicon dichlorohydride as reactive agent, depositing PSG or SRO) . It is the examiner's position that a person having ordinary skill in the art at the time of the instantly claimed invention would have found it obvious to modify Tran and Jen by adding any of same well known features to same because these features would have been anticipated to provide their art recognized advantages and thus produce an expected result.

Allowable Subject Matter

6. Claims 16, 17 and 21-24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (703) 3050222.


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

K-C C

November 9, 1999